

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-9 are pending, Claim 1 having been amended by way of the present amendment.

In the outstanding Office Action the drawings were objected to; Claims 1-3 and 7 were rejected as being anticipated by Inoue et al. (U.S. Patent No. 6,304,687, hereinafter Inoue); Claims 4-5 and 8-9 were rejected as being unpatentable over Inoue; and Claim 6 was indicated as containing allowable subject matter.

Applicants appreciatively acknowledge the identification of allowable subject matter. However, in view of the asserted prior art Applicants have opted not to amend Claim 6 as it is believed that broader protection is available via the independent claims.

In reply a separate letter requesting entry of new drawings is filed herewith, adding the label "Prior Art" in Figures 9-11.

Claim 1 has been amended to address informalities, but has not otherwise been substantively changed. Claim 1 is directed to an optical module having a planar lightwave circuit chip comprising a substrate and a waveguide forming region located on the substrate. A plurality of lids are installed along an edge surface of at least one side of the edge of the planar lightwave circuit chip. Furthermore, an optical fiber array is connected to the planar lightwave circuit chip.

Support for Claim 1 is found throughout the specification, for example, in Figure 1. In a non-limiting example, Claim 1 covers a circuit chip 1 having an optical fiber array 21 disposed thereon. The lightwave circuit chip includes a substrate 11 on which various lids (20a, 20b, 20c, and 20d) are disposed at respective corners of the substrate. As can be seen, lids 20a and 20b are installed along a certain distance of the edge surface of the optical input side and lids 20c and 20d are installed along a certain distance of the edge surface of the

optical output side. Each lid 20 is made of quartz and provides a stable connection between the planar lightwave circuit 1 and each edge of the optical fibers 3a and 3b. The edge surface of the planar lightwave circuit chip and the edge surface of the lid 20 are polished together and an adhesive agent is used to fix the lid 20 to the waveguide forming region.

An advantage with the present structure is that by not having a long lid (such as that shown in Figure 13), a lesser amount of adhesive is required to adhere the lid 20 to the substrate. By having smaller lids and less adhesive, even if the planar lightwave chip has a camber to it, it is possible to prevent an unevenness of the thickness of the adhesive 16 located between the chip 1 and the lid 10 because the lids are both installed at edge areas of the planar lightwave circuit chip 1 (see, e.g., paragraph 0081 of the published patent application). An advantage of this approach, is that the insertion loss of the optical module hardly changes even due to a change of the temperature by the expansion or contraction of the adhesive agent 17 (published specification paragraph 0084).

Claim 1 stands rejected as being anticipated by Inoue. Applicants respectfully traverse the rejection. Inoue does not describe lids that are disposed along an edge surface of the planar lightwave circuit chip (see the absence of such structures in Figure 13). Rather, the outstanding Office Action relies on the disclosure of the “lid 16” (see, e.g., Figure 20) which is located in the center of the substrate. The structure of Inoue would not address the camber problem, and thus is substantially different than the present invention.

Consequently, it is respectfully submitted that Inoue does not disclose a plurality of lids installed along an edge surface of at least one side of the edges of the planar lightwave circuit chip, and therefore does not anticipate Claim 1. As Claims 2-3 and 7 depend from Claim 1 it is respectfully submitted that these claims also patentably define over Inoue.

With regard to Claims 4-5 and 8-9, each of these claims is rejected over Inoue for the same reasons discussed above with regard to Claim 1, as well as additional assertions made in

the outstanding Office Action. However, as discussed above with regard to Claim 1 Inoue does not describe, teach or suggest the claimed plurality of lids installed along an edge surface of least one side of the edges of the planar lightwave circuit chip. Therefore the outstanding Office Action has not made a *prima facie* case of obviousness with regard to Claims 4-5 and 8-9 because not all of the elements in Claim 1 can be found in Inoue or in the comments made in the outstanding Office Action.

Consequently, in view of the present amendment and in light of the foregoing comments it is respectfully submitted that the invention defined by Claims 1-9 is patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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IN THE DRAWINGS

The attached sheets of drawings include changes to Figs. 9-11. These sheets, which include Fig. 9-11, replace the original sheets including Figs. 9-11.

Attachment: Replacement Sheets